Figure 1

Type A TREN-type

First Generation

Second Generation

Type B Penta-E type

First Generation

Second Generation

where
X = nothing or S or S(CH₂)₂O or S(CH₂)₃O or S(CH₂)₄O; Y = O or SS or (CH₂)₂O or S(CH₂)₃O or S(CH₂)₄O;
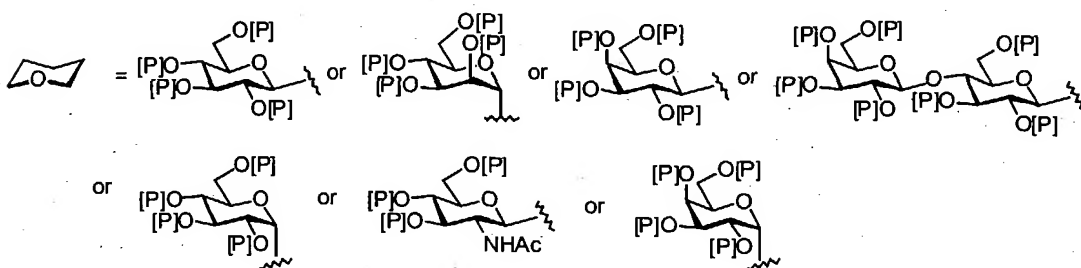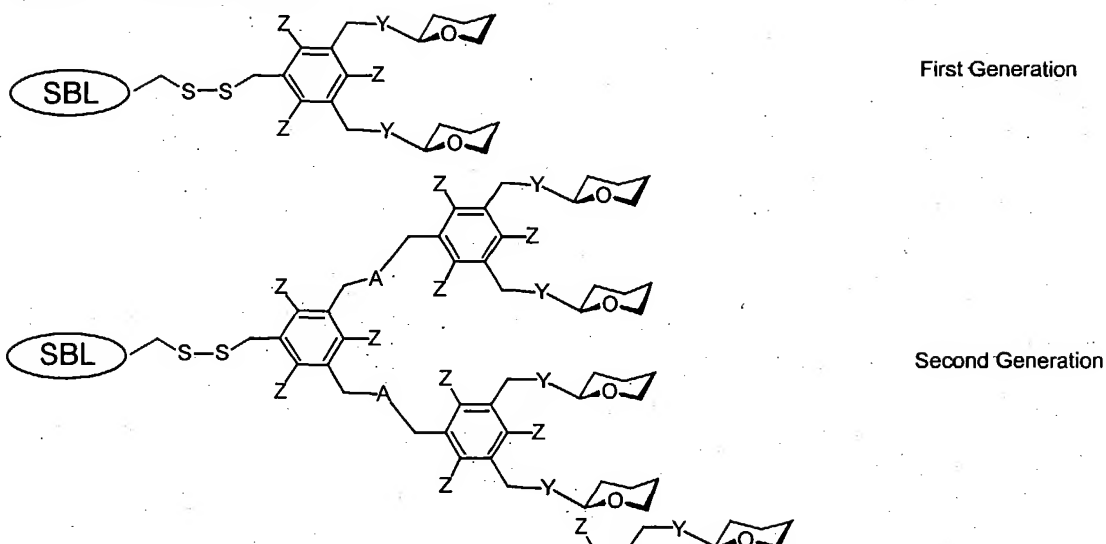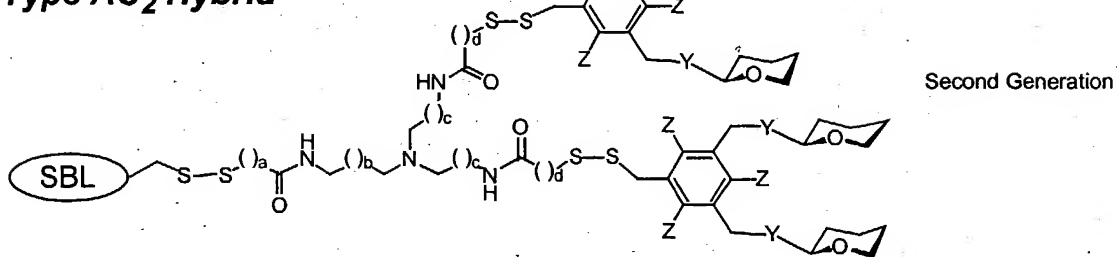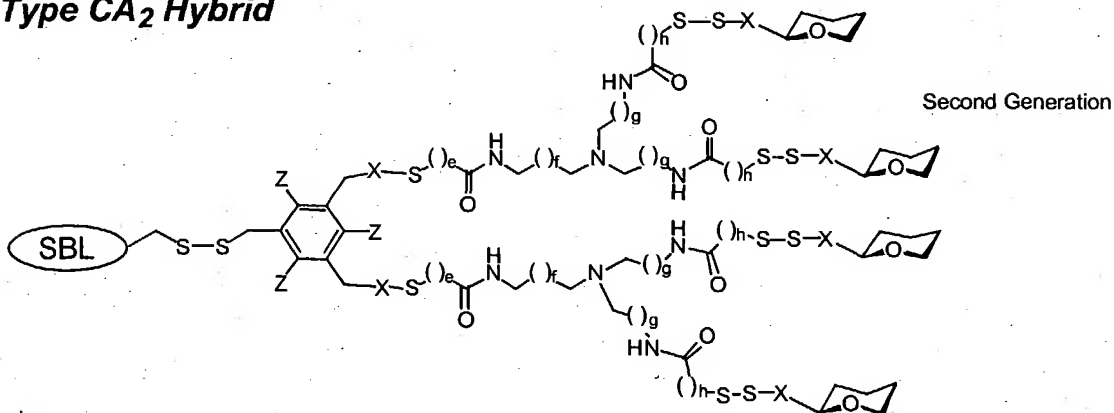A = SSor O; [P] = H or Ac or Bn

where
X = nothing or S or $S(CH_2)_2O$ or $S(CH_2)_3O$ or $S(CH_2)_4O$; Y = O or SS or $(CH_2)_2O$ or $S(CH_2)_3O$ or $S(CH_2)_4O$;
A = SSor O; [P] = H or Ac or Bn

Figure 2

Type C - ArGal type

First Generation

Second Generation

Type AC$_2$ Hybrid

Second Generation

Type CA$_2$ Hybrid

Second Generation

where
X = nothing or S or S(CH$_2$)$_2$O or S(CH$_2$)$_3$O or S(CH$_2$)$_4$O; Y = O or SS or (CH$_2$)$_2$O or S(CH$_2$)$_3$O or S(CH$_2$)$_4$O;
A = SS or O; [P] = H or Ac or Bn, Z = H or CH$_3$

Figure 3

Lectin

Glyco **dendri** **protein**

Figure 4

SBL
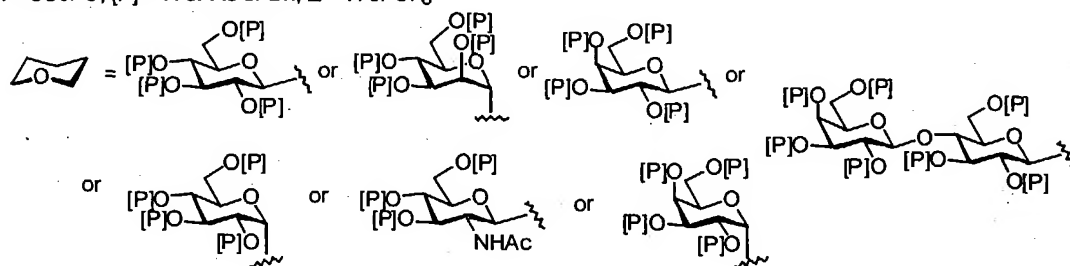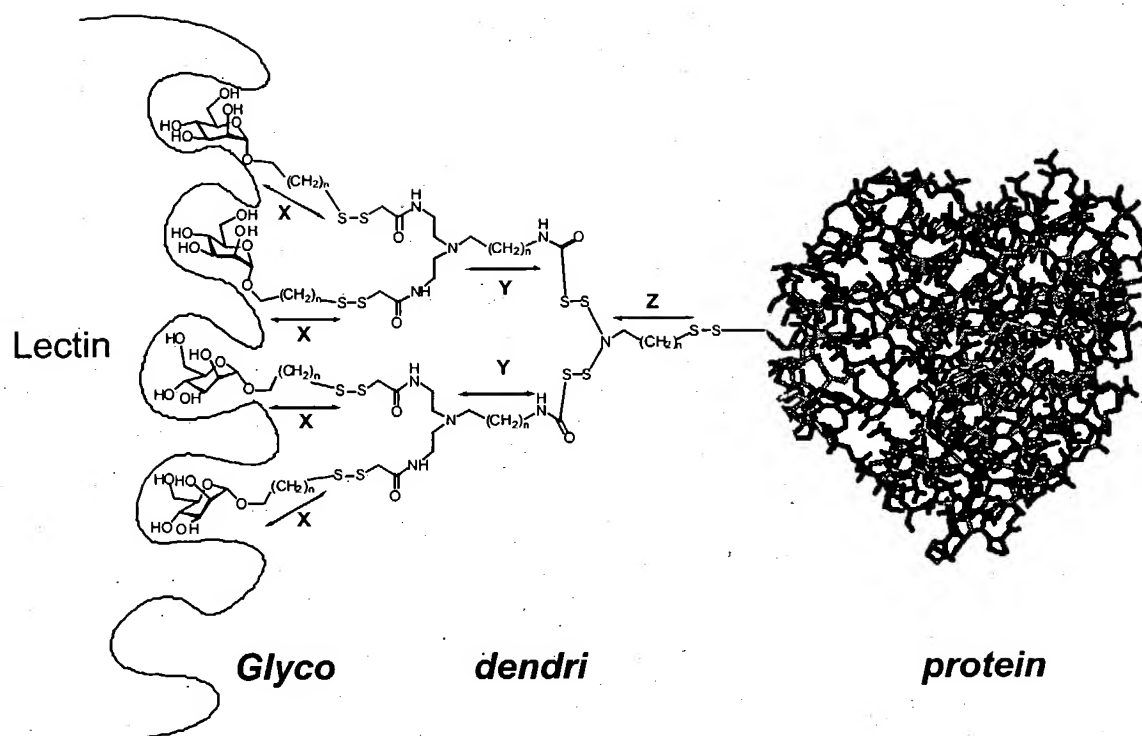
Glycodendriprotein
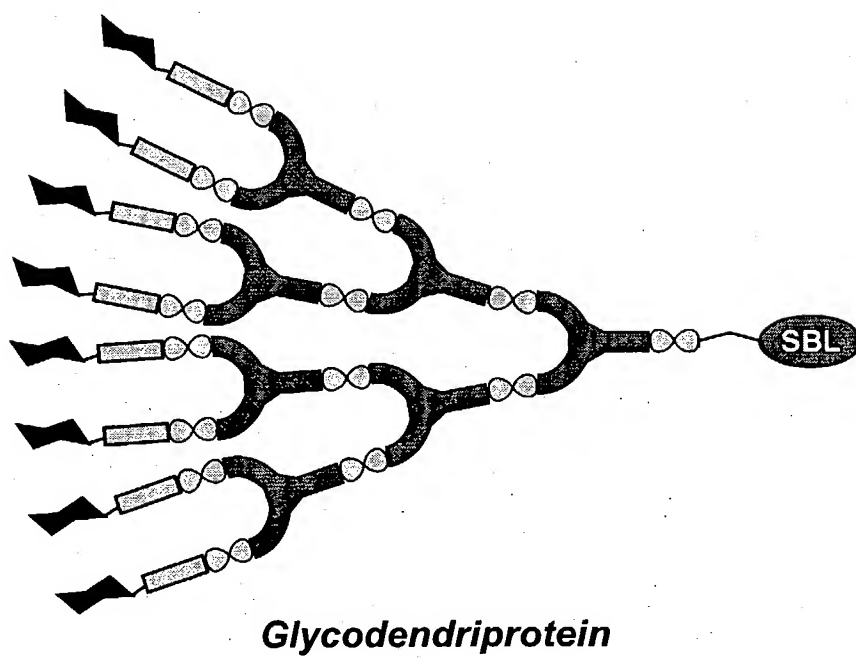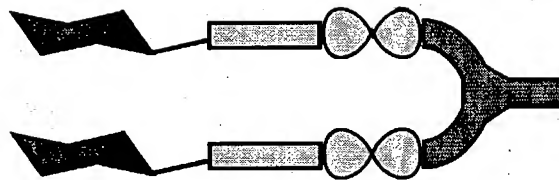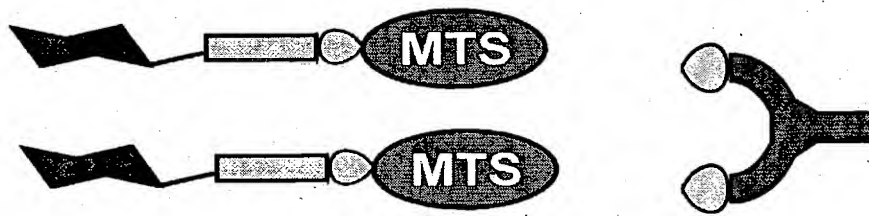
Figure 5

Normal Addition
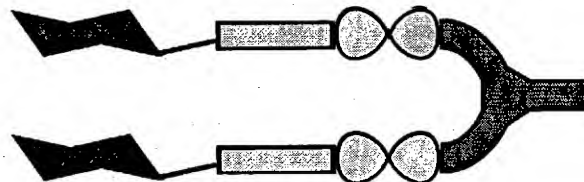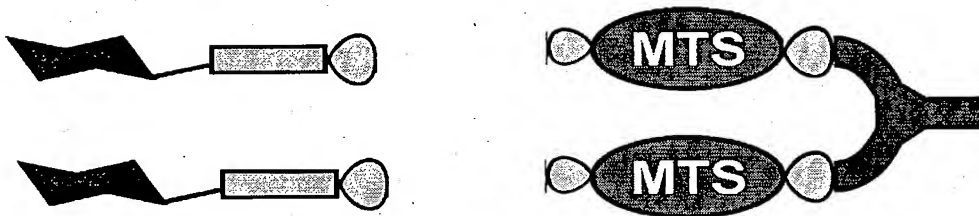
Inverse Addition

Figure 6

Scheme 1

1   **2**   **3**

Scheme 2

1

Scheme 3

6   **7**   **8**
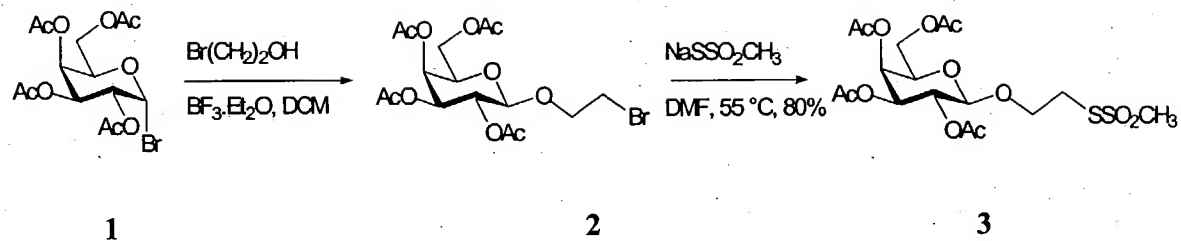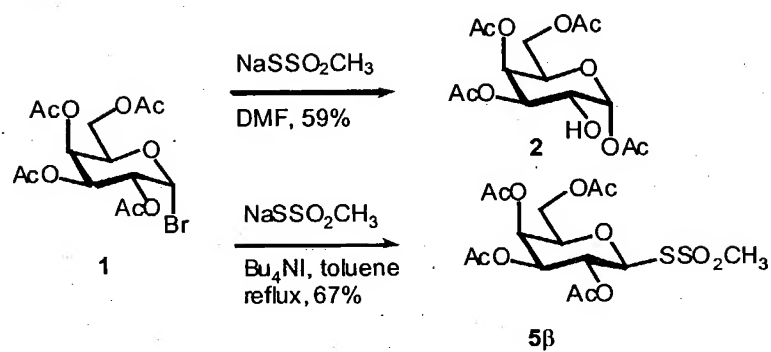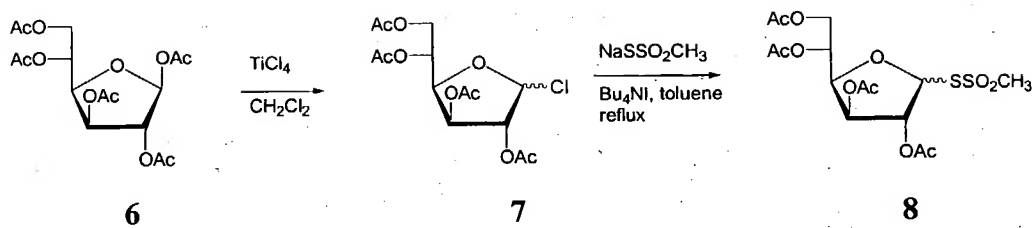
Figure 7

Scheme 4

Scheme 5

Figure 8

5β
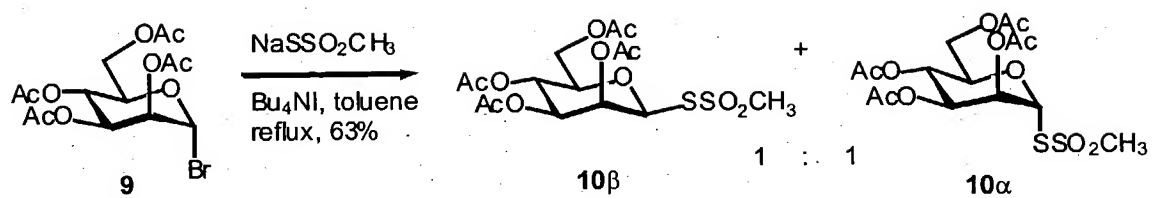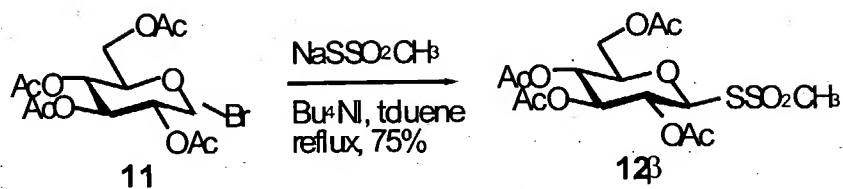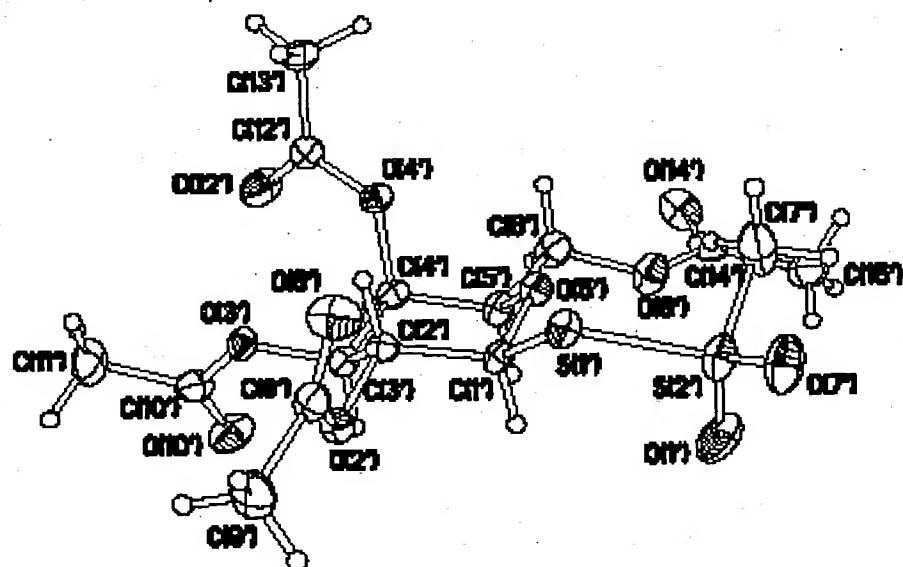
Figure 9

Figure 10

Figure 11

deprotected sugar
(β-D-galactose)

linker
(nothing or -OCH₂CH₂-)

-S-S-
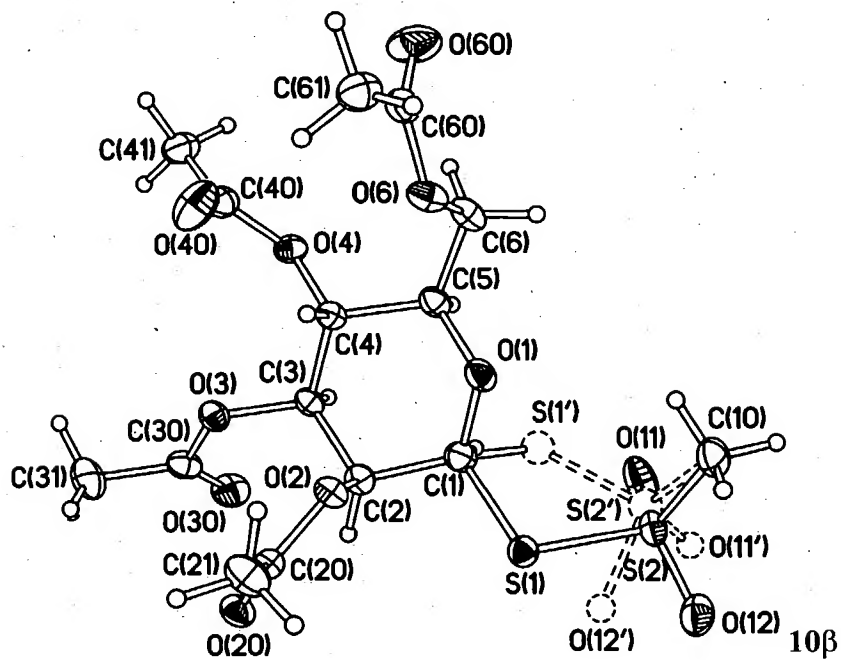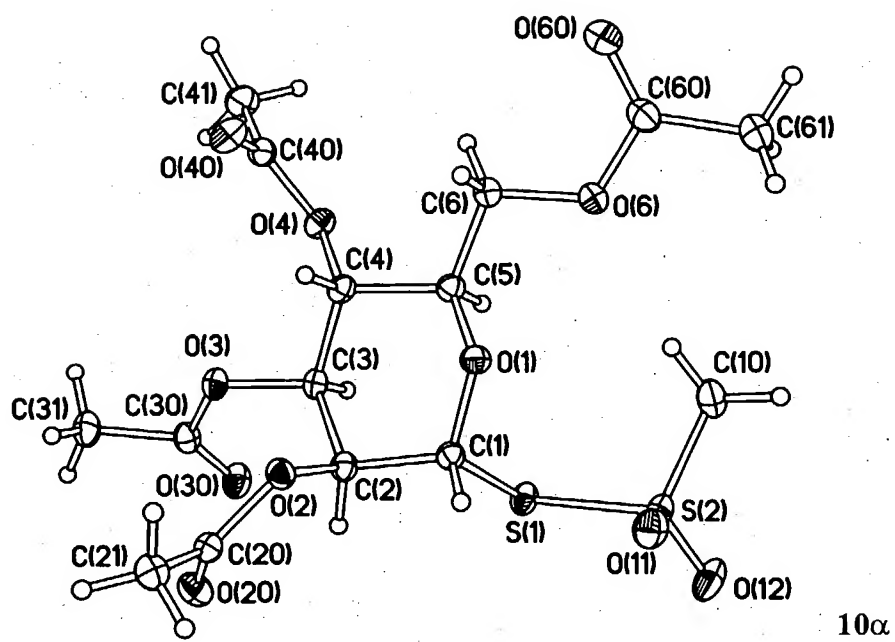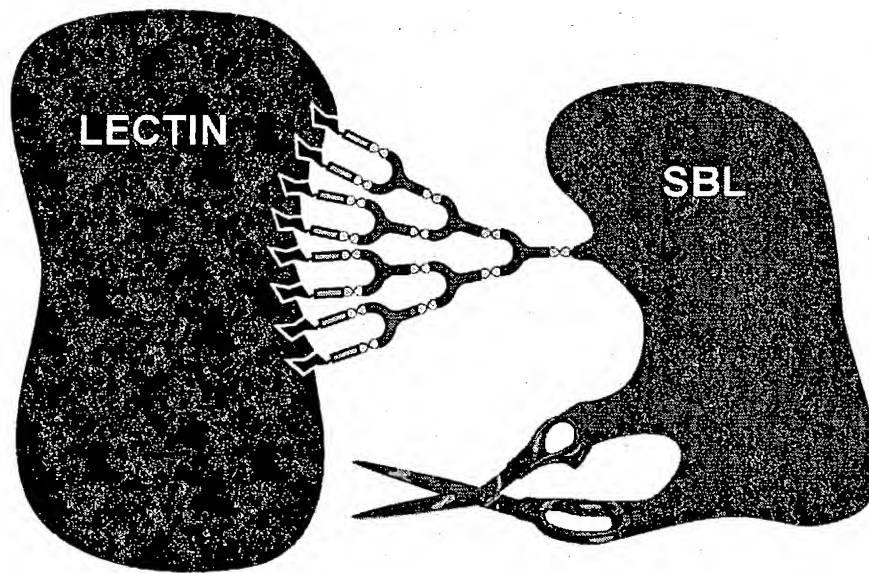
Figure 12

Scheme 6

Glycodendrimer proteins from 7'a, 7'b
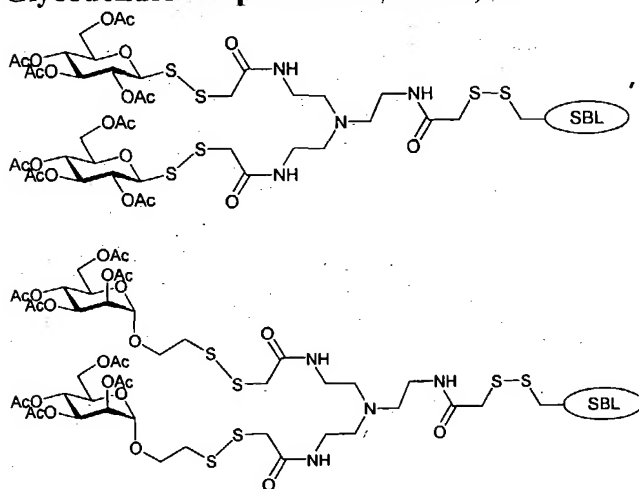
Figure 13

Scheme 7
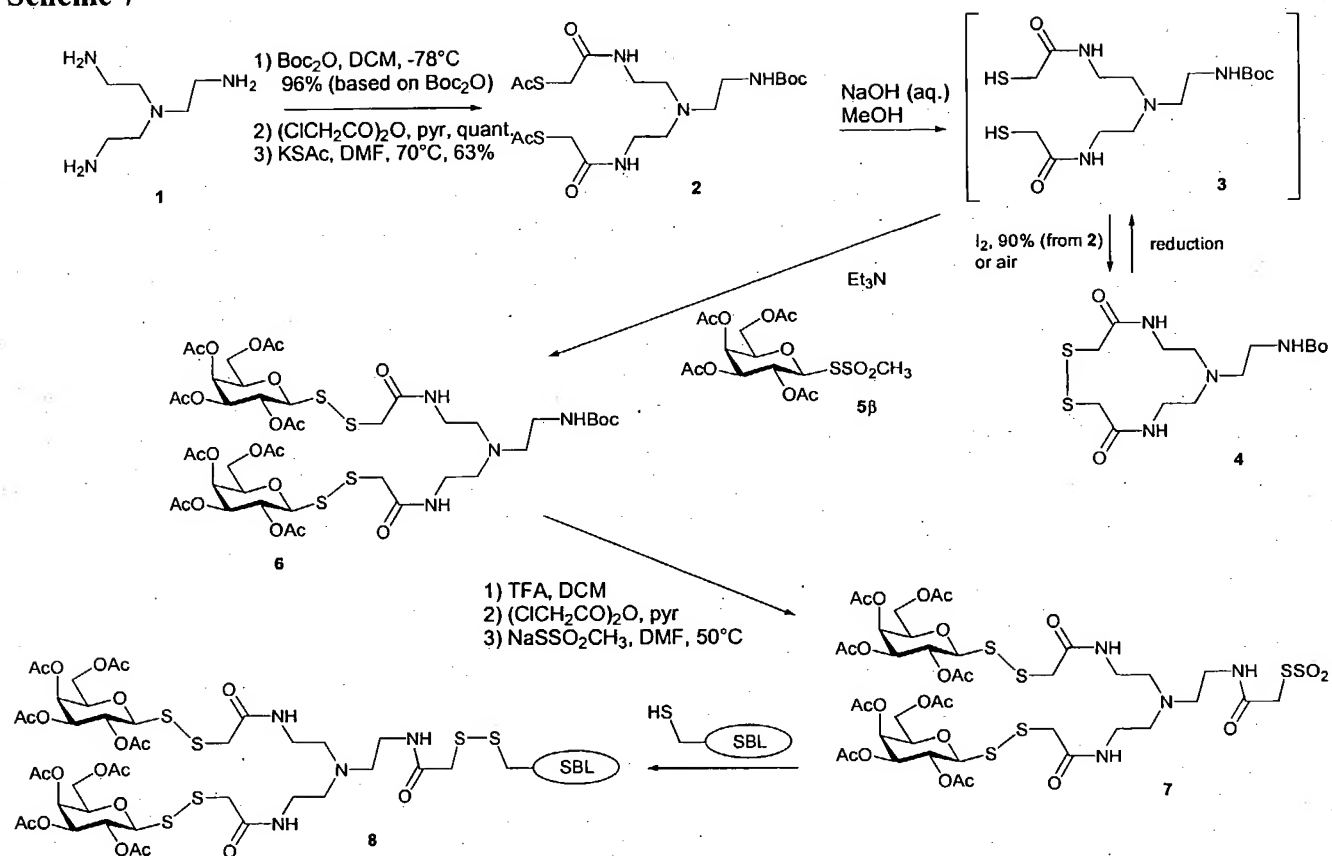
Figure 14

Scheme 8
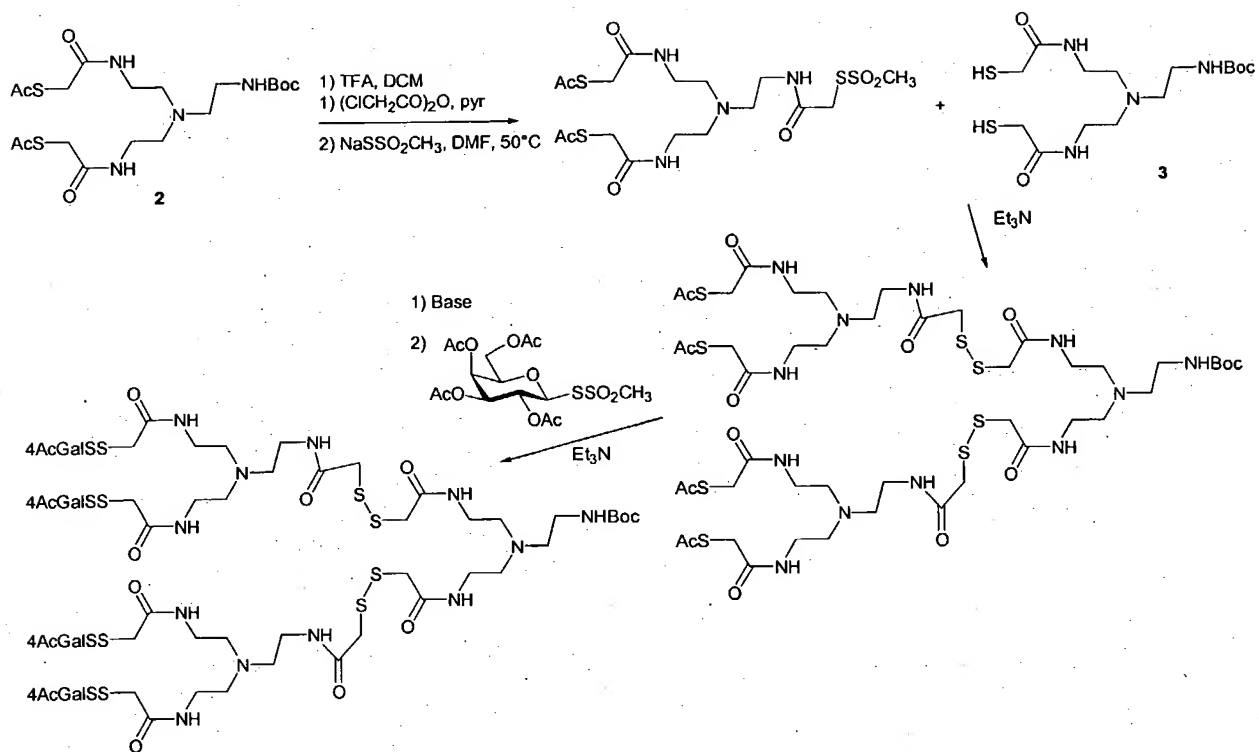
Figure 15

Scheme 9
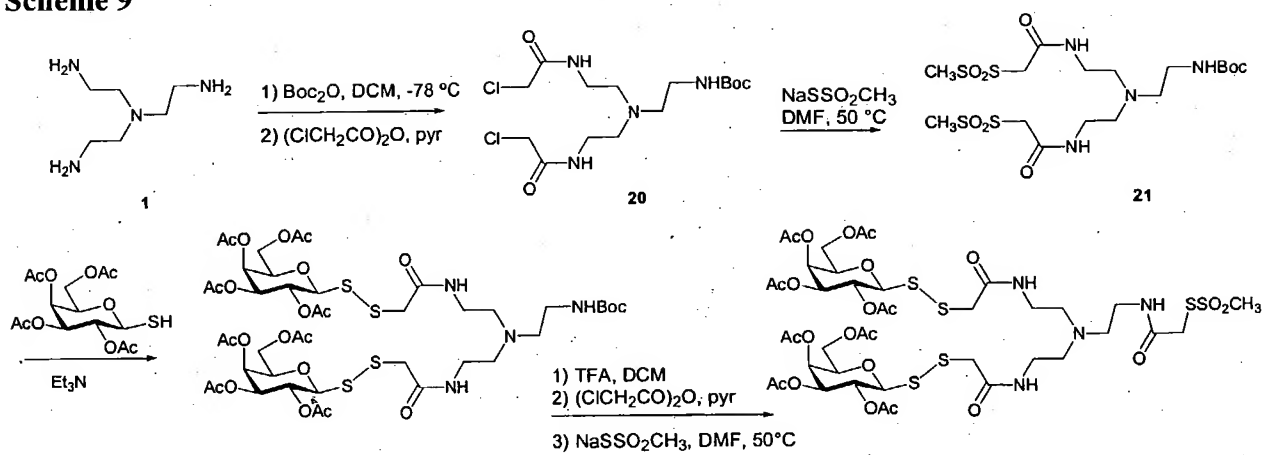
Figure 16

Scheme 10
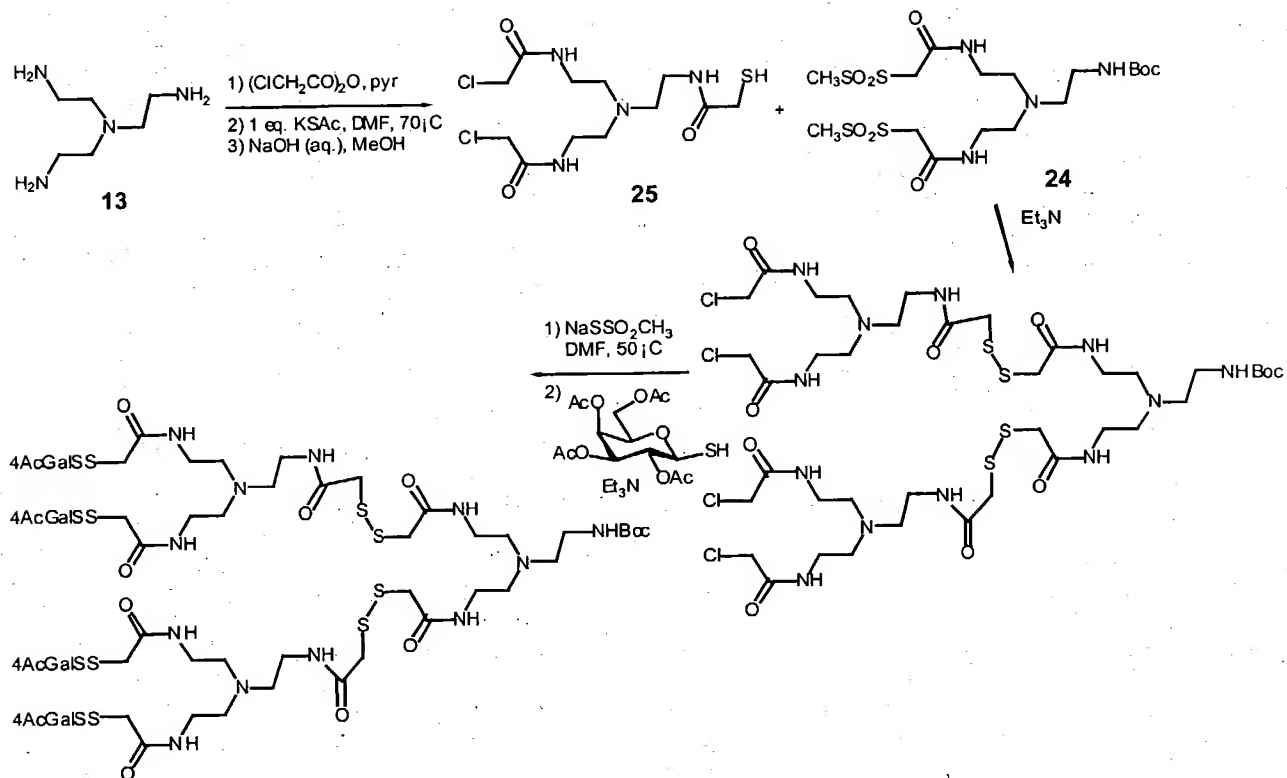
Figure 17

Scheme 11
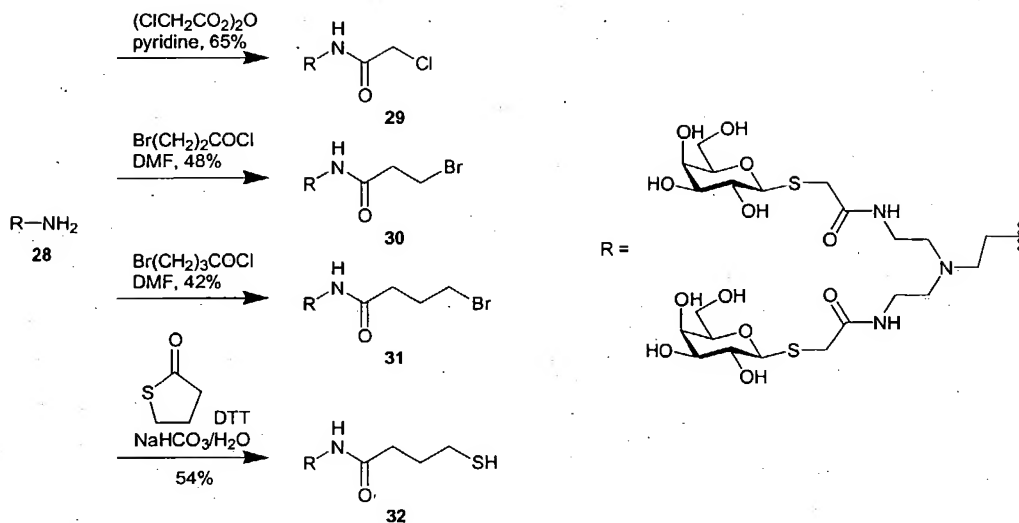
Scheme 12
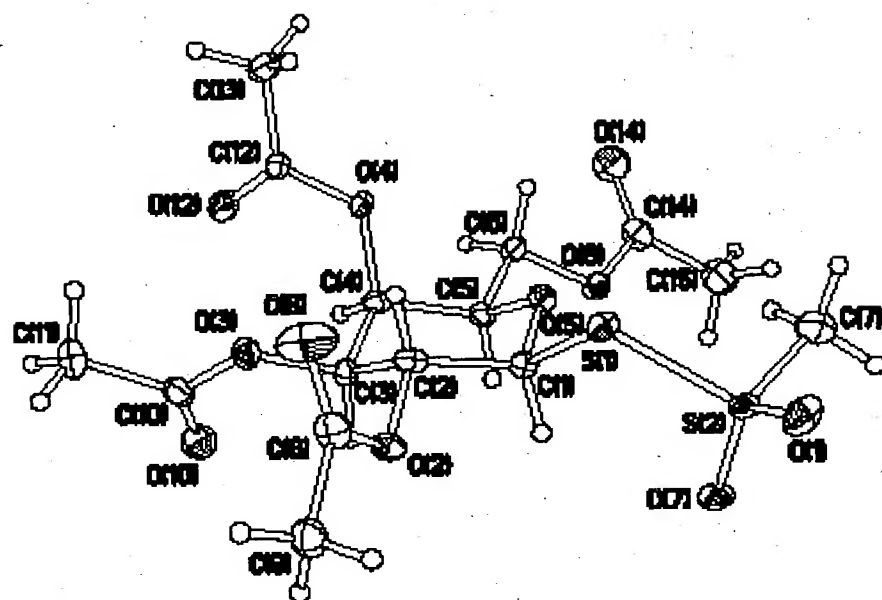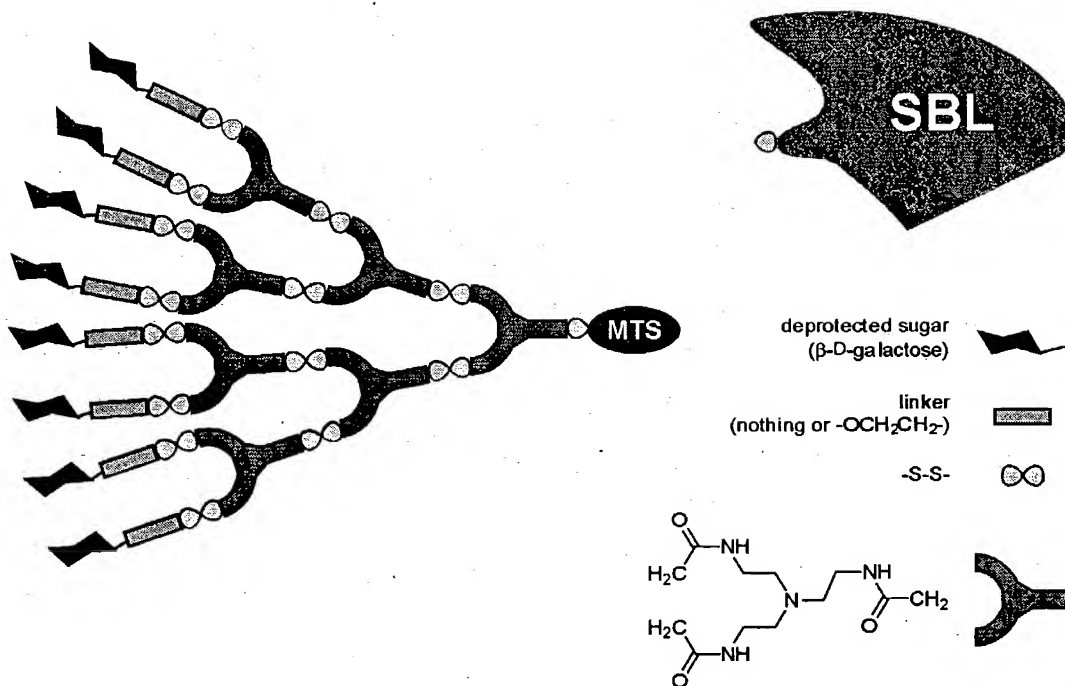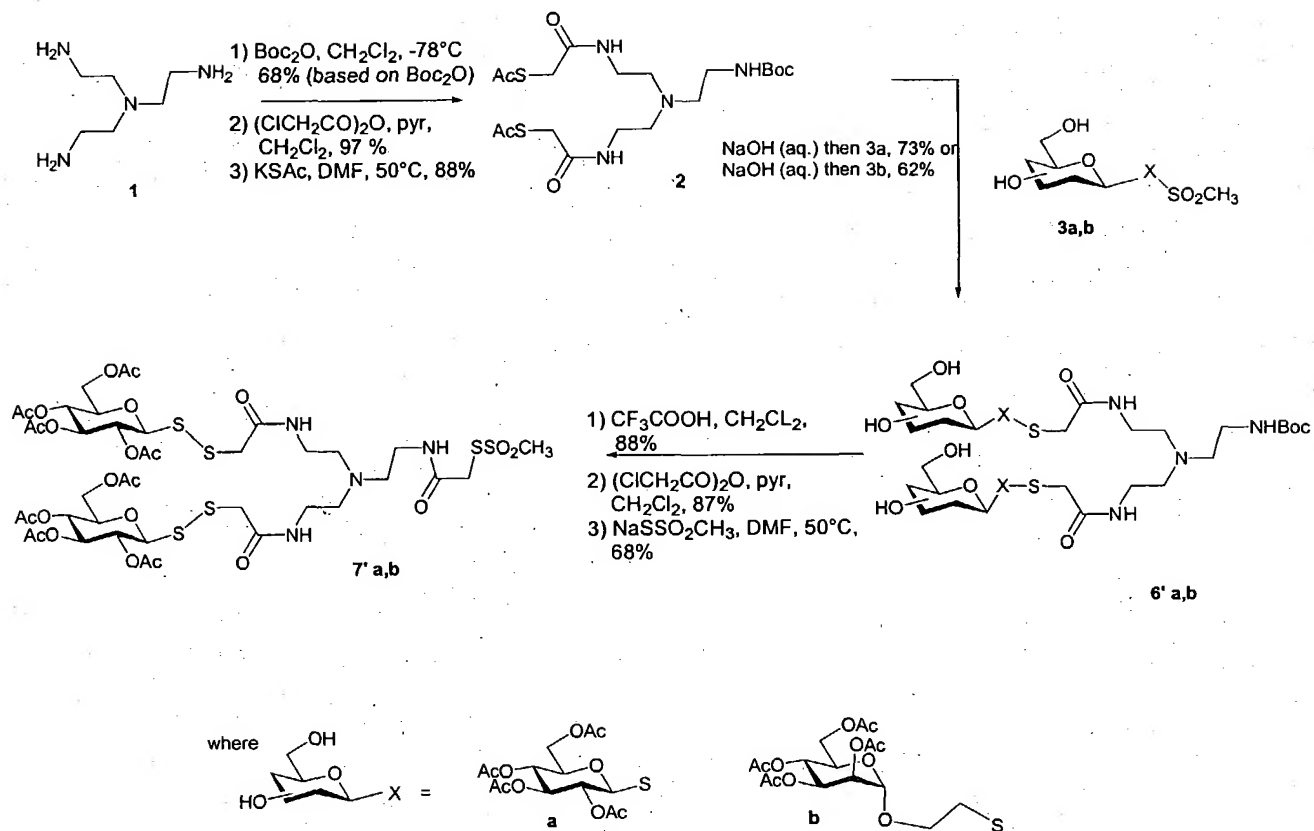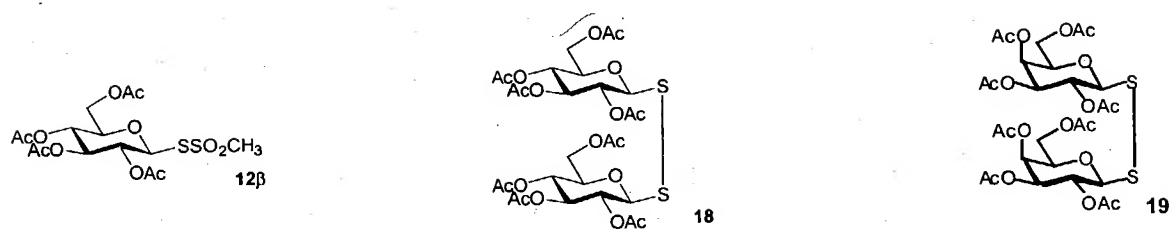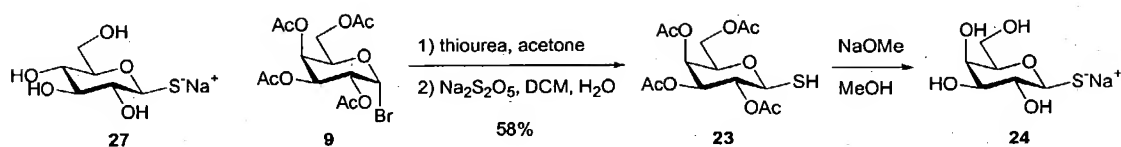

Scheme 13
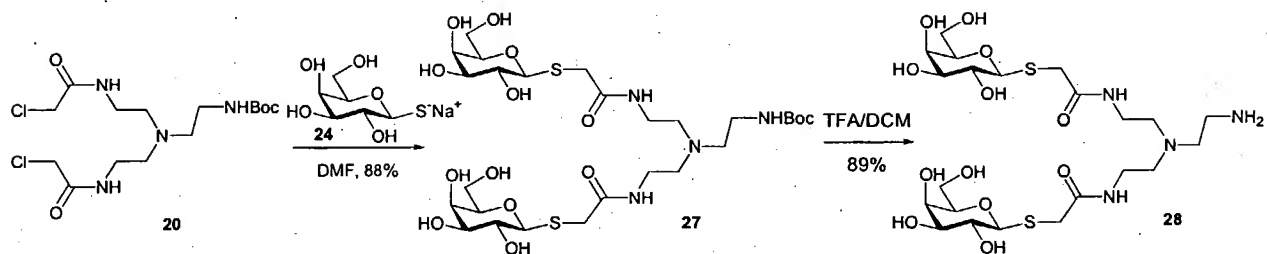
Figure 18

Scheme 14
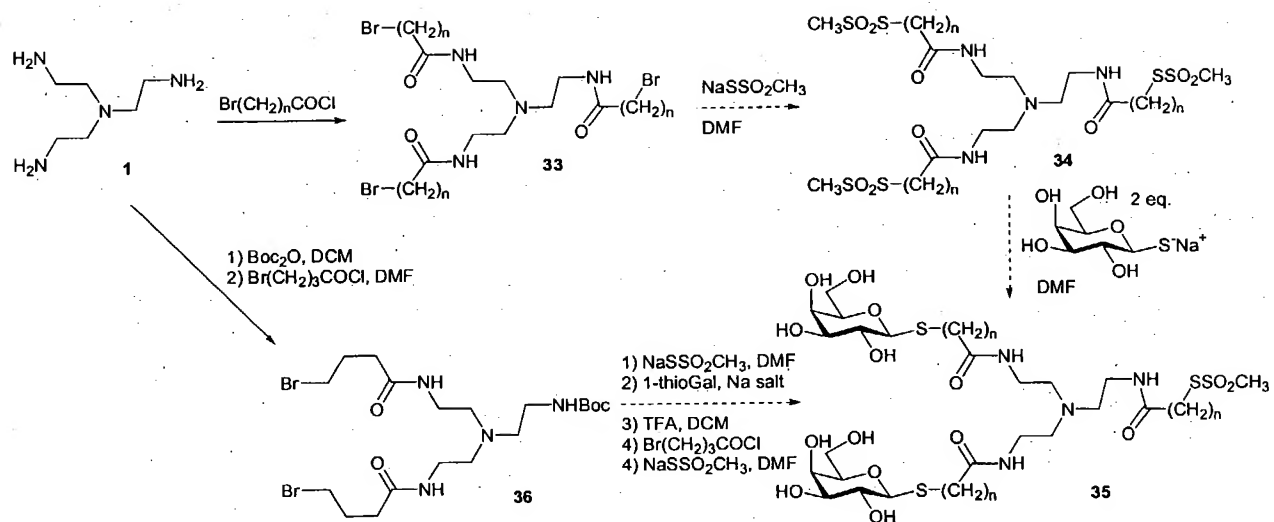
Figure 19

Scheme 15

Scheme 16

$$NaSO_2CH_3 \xrightarrow{\text{S, MeOH, reflux}} NaSSO_2CH_3 + \text{unidentified by-product}$$

77%

Figure 20

Scheme 17
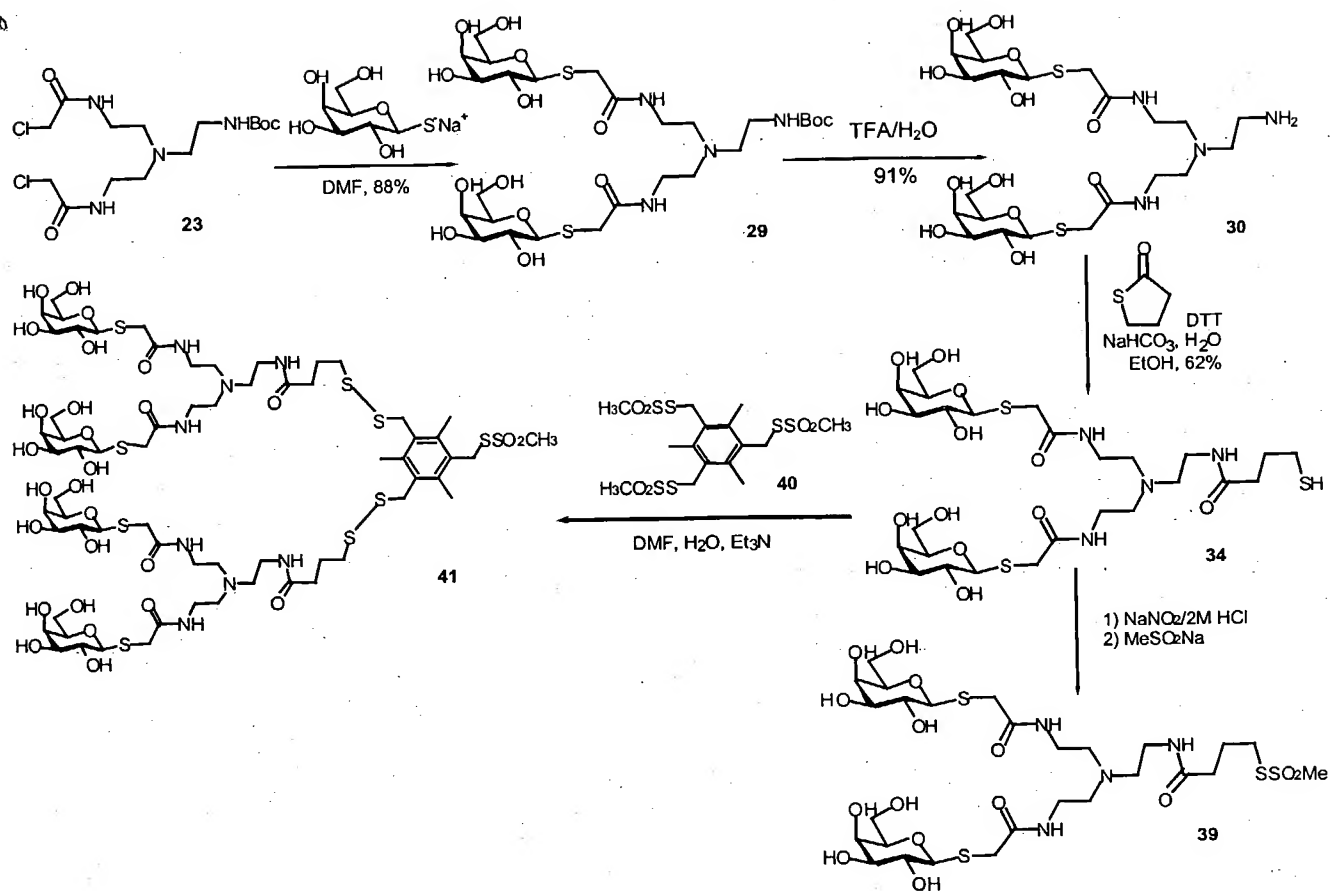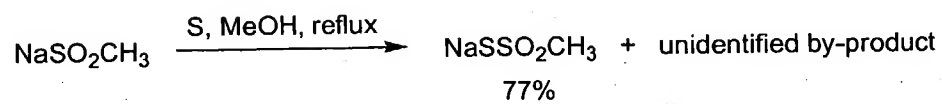
Normal addition	4%	5%	91%
DMF, slow addition, high dilution	6%	9%	56%
cat Bu₄NI, toluene	21%	17%	47%
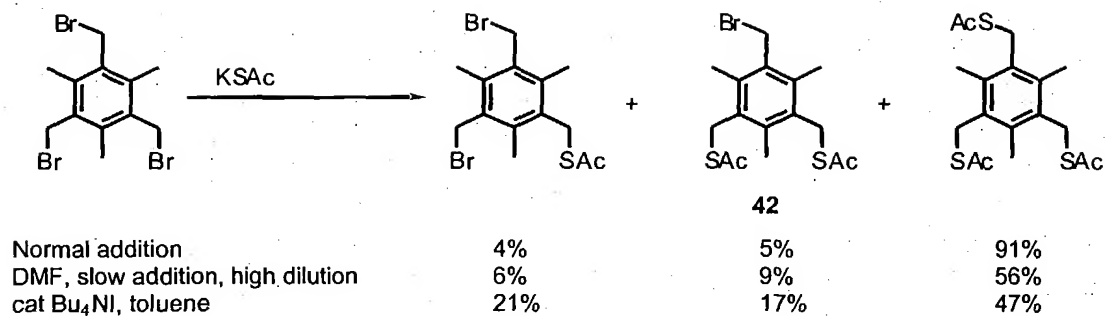
Scheme 18

Figure 21

Scheme 19

43 → 2 eq. NaSSO₂CH₃, 1 eq. KSAc, DMF →

45
18%

+

46
44%

47
15%

+

48

Scheme 20

49 → MeOH, cat. H₂SO₄ reflux, 87% → → LiAlH₄ THF, 83% → **50**

52

51

53

Figure 22

Scheme 21

S156C-SS-ArGal-(SS-Gal)₂

Figure 23